REMARKS

As a preliminary matter, claims 4 and 5 have been re-written in independent form, and claims 2 and 3 now depend from claim 1. New dependent claims 14-17 depend from claims 4 or 5.

Claims 1 and 2 stand rejected under 35 U.S.C. § 102 on the basis of Saitho, et al. '543, and claims 4 and 5 stand rejected under 35 U.S.C. § 103 on the basis of Saitho, et al. '543. Applicants traverse this rejection for the following reasons.

Amended claim 4 defines that the lower magnetic pole layer is made of a nitride. The lower auxiliary magnetic pole is defined in the lower magnetic pole layer between the medium-opposed surface and the depression. Accordingly, the lower auxiliary magnetic pole is also made of the nitride. In the rejection of claim 4, the Examiner contends that the listed material is well known and commonly used for pole layers in thin film magnetic heads. See item 7, lines 6 and 7 of the outstanding Office Action. Applicants respectfully disagree.

A conventional method utilizes a plating process to define a depression on the upper surface of the lower magnetic pole layer. Specifically, the lower half of the lower magnetic pole layer is formed first. A photoresist film is then patterned on the lower half of the lower magnetic pole layer.

The photoresist film corresponds to the extent of the depression. A magnetic material is then deposited on the surface of the lower half of the lower magnetic pole layer around the photoresist film through the plating process. The upper half of the lower

magnetic pole layer is thus established around the photoresist film, and the photoresist film is thereafter removed. The depression is in this manner defined in the upper surface of the lower magnetic pole layer. In this case, the plating process cannot be replaced with a sputtering process, since the material deposited through the sputtering process cannot form a complete film around the photoresist film.

The plating process forces the user to select only certain types of the deposited material. The plating process cannot be utilized to deposit a nitride. Saitho, et al. also employs a plating process in order to form the concave portion 16 and the upper common pole layer 122. See Figure 1 and the description of column 5, line 65 to column 6, line 5. The concave portion 16 and the upper common pole layer 122 are made of NiFe.

On the other hand, in the present invention, the lower magnetic pole layer may first be deposited on a substratum. The depression is then formed on the surface of the lower magnetic pole layer. For example, a photoresist film may be formed on the surface of the lower magnetic pole layer. The photoresist film may pattern the shape of the depression.

The lower magnetic pole layer is thereafter subjected to an ion milling process, for example. The depression serves to define the rear end of the lower auxiliary magnetic pole. If the lower auxiliary magnetic pole is engraved out of the formed lower magnetic pole layer in the aforementioned manner, no magnetic layer is additionally formed on the lower magnetic pole layer for forming the lower auxiliary magnetic pole. A dry process such as sputtering and vapor-deposition can be employed to form the lower magnetic pole layer in addition to a wet process such as plating, so that the choice of material can be widened for

the lower magnetic pole layer and the lower auxiliary magnetic pole. If sputtering or vapor-deposition is employed, a nitride may be selected. FeN is representative of the nitrides expected to have a saturation magnetic flux density or saturation of magnetization *Bs* higher than that of NiFe, for example.

Nitrides cannot be employed when plating is selected for deposition. These features are fully supported by the descriptions of the present specification, page 3, line 25 to page 4, line 3 and page 14, line 24 to page 15, line 14. Accordingly, adoption of Official Notice on the rejection of claim 4 is respectfully traversed.

Amended claim 5 defines that the lower magnetic pole layer is made of a composite material comprising a magnetic material and an oxide. In the rejection of claim 5, the Examiner contends that the listed material is well known and commonly used for pole layers in thin film magnetic heads, as with claim 4. The above arguments of amended claim 4 can be applied to the case of amended claim 5. If sputtering or vapor-deposition is employed, a composite material including a magnetic material and an oxide may be selected. NiFe-Al_2O_3 is representative of composite material expected to have a specific resistance higher than a simple NiFe. The composite material cannot be employed when plating is selected for deposition. Accordingly, adoption of Official Notice on the rejection of claim 5 is also traversed. Withdrawal of these rejections is respectfully requested.

The rejection of claim 3 in paragraph 8 of the Office Action is traversed for the reasons given with respect to independent claim 4. Withdrawal is requested.

For the foregoing reasons, Applicants believe that this case is in condition for allowance, which is respectfully requested. The examiner should call applicants' attorney if an interview would expedite prosecution.

Respectfully submitted,

GREER, BURNS & CRAIN, LTD.

By: Patrick G. Burns
Registration No. 29,367

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300 South Wacker Drive, Suite 2500
Chicago, Illinois 60606
(312) 360-0080
Customer No. 24978